

Appl. No. 10/711,537
Amdt. dated July 03, 2007
Reply to Office action of April 3, 2007

Amendments to the Drawings

Replacement sheet is provided for the amendment of Figure 5

REMARKS/ARGUMENTS

In the Claims:

Claims 1, 7, 9, 15 and 17 had been amended to overcome the rejections. Claims 1-18 are now pending in this instant application.

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In the Drawings:

Figure 5 had been amended by adding the "(Prior Art)" legend and should be in compliance with 37 CFR 1.121(d). No new subject matter had been added.

10 Response to Claim Rejections – 35 U.S.C. §102:

In the current rejection, claims 1-6, 9-14 and 17-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Maurant (US Patent 6687494). Independent claims 1, 9 and 17 are thus amended to particularly differentiate between the invention and the referenced prior art cited by Examiner.

15 **Regarding claim1**, the cited reference Maurant disclosed an image reject mixer (figure. 1, column 1 lines 58-60) including first and second doubly balanced mixers (figure. 1, column 1 line 60-61) and first and second quadrature combining circuits (figure. 1, column 2 lines 35-37). Examiner alleged that the first and second quadrature combining circuits are phase shifters and combining circuits representing the polyphase filter network depicted in the instant application and as claimed in claim 1. **The first and second quadrature combining circuits as illustrated in Maurant, are segregated circuits coupled with transistor pairs** (figure 1, component 39 of figure 1A and component 40 of figure 1B). The transistor pairs are required for cross coupling the respective differential signals received from the segregated first and second doubly
20 balanced mixers (column 2 lines 40-60). On the other hand, the **polyphase filter network of the instant application receives the current mode in-phase mixed signal and the current mode quadrature-phase mixed signal within a single network built with passive components**. Therefore, the in-phase and quadrature-phase outputs of the
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polyphase filter network can be joined to form a resultant IF signal without active components (e.g. transistor pairs).

Applicant had amended claim 1 to overcome the current rejection by specifying that the current mode in-phase mixed signal and the current mode quadrature-phase mixed
5 signal are coupled together with passive components within the polyphase filter network. Reconsideration of the amended claim 1 is respectfully requested.

Regarding claim 9, besides the aforementioned arguments that should also apply, the amendment of adding the step of joining an in-phase output and a quadrature-phase output of the polyphase filter network to generate a resultant IF signal is emphasized
10 herein to differentiate between the polyphase filter network of the instant application and the first and second quadrature combining circuits of the cited reference Mourant. The polyphase filter network comprises both an in-phase output and a quadrature-phase output while the first and second quadrature combining circuits include either an in-phase output or a quadrature-phase output (figure 1) in their respective circuits.
15 A quadrature combining circuit will not function like the polyphase filter network introduced in the instant application unless the two quadrature combining circuits as taught by Mourant are connected together with active components (e.g. transistor pairs).

Applicant has amended claim 9 by specifying that a resultant IF signal is generated by simply joining an in-phase output and a quadrature-phase output of the polyphase filter
20 network, rather than joining two different circuits with additional efforts. Reconsideration of the amended claim 9 is respectfully requested.

Regarding claim 17, the aforementioned arguments should also apply. Reconsideration of the amended claim 17 is respectfully requested.

25 Response to Claim Rejections – 35 U.S.C. §103:

In the current rejection, claims 7-8 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mourant (US Patent 6687494) in view of Wang (US Patent 6999746). Claims 7 and 15 are amended in order to overcome the rejections.

As read in paragraph 26 of the instant application, by sharing the single current source, the in-phase mixing operation performed by the first Gilbert mixer is better matched with the quadrature-phase mixing operation performed by the second Gilbert mixer. Such subject matter is not taught in the cited references and is therefore added
5 into claims 7 and 15 to act as limitations of the claims. Reconsideration of the amended claims 7 and 15 are respectfully requested.

For at least the aforementioned reasons, it is respectfully submitted that claims 1, 9 and 17, as well as their respective dependent claims 2-8, 10-16, and 18 are patentably
10 distinguishable over the cited references and the rejection of these claims to be withdrawn is respectfully requested.

Conclusion

Accordingly, it is submitted that all of the pending claims are allowable over the
15 cited references. Such action and the passing of this case to issue are therefore respectfully requested.

Sincerely yours,



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